

WHAT IS CLAIMED IS:

1. A video signal transmission method for transmitting the video signal on which the spectrally spread additional information is superimposed, comprising the steps of:

generating a spreading code for spectral spreading at the timing based on the sync signal of said video signal;

generating inversion spreading code formed by dividing the interval of each chip of spreading codes into N (N is an integer of 2 or larger) divided intervals and by allocating alternately the value of the chip and the value of inverted value of said chip to said N divided intervals;

performing spectral spreading on the additional information signal using said inversion spreading code; and

superimposing the spectrally spread additional information signal on the video signal.

2. The video signal transmission method as claimed in claim 1, wherein the spreading code for spectral spreading is generated every one or a plurality of sync signals of the video signal.

3. The video signal transmission method as claimed in claim 1, wherein said video signal transmission method further includes steps of:

receiving the video signal on which the spreading code for spectral spreading;

detecting the sync signal from the received video signal;
generating an inversion spreading code for inversion
spectral spreading corresponding to the inversion spreading code
based on the detected sync signal; and

extracting the additional information signal by performing inversion spectral spreading on the received image using said inversion spreading code for inversion spectral spreading.

4. The video signal transmission method as claimed claim 3, wherein the additional information signal is the duplication control signal, and said video signal transmission method further includes a step for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings based on said duplication control signal.

5. A video signal output device comprising:

spreading code generation means for generating the spreading code for spectral spreading at the timing based on the sync signal of the video signal;

inversion spreading code generation means for generating the inversion spreading code formed by dividing the interval of each chip of spreading codes into N (N is an integer of 2 or larger) divided intervals and by allocating alternately the value of the chip and value of inverted value of said chip to said N divided

intervals;

spectral spreading means for performing spectral spreading on the additional information signal using said inversion spreading code;

superimposing means for superimposing the spectrally spread additional information signal on the video signal; and

output means for outputting the video signal on which the spectrally spread additional information signal is superimposed.

6. The video signal output device as claimed in claim 5, wherein the spreading code for spectral spreading is generated every one or a plurality of sync signals of the video signal.

7. The video signal output device as claimed in claim 5, wherein the additional information signal is the duplication control signal for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings.

8. A video signal receiving device, served as a video signal receiving device for receiving the analog video signal on which the spectrally spread additional information signal is superimposed using the inversion spreading code formed by dividing the interval of each chip of spreading codes for spectral spreading generated at the timing based on the sync signal of the video signal into N (N is an integer of 2 or larger)

divided intervals and by allocating alternately the value of the chip and value of inverted value of said chip to said N divided intervals, comprising:

sync detection means for detecting the sync signal from the received video signal;

inversion spreading code generation means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected sync signal; and

inversion spectral spreading means for performing inversion spectral spreading on the received video signal using said inversion spreading code for inversion spectral spreading, and for extracting the additional information signal.

9. The video signal receiving device as claimed in claim 8, wherein the spreading code for spectral spreading is generated every one or a plurality of sync signals of the video signal.

10. The video signal receiving device as claimed in claim 8, wherein the additional information signal is the duplication control signal, and said video signal receiving device further includes a duplication control means for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings dependently on said duplication control signal.

11. A video signal duplication control system provided

with a video signal output device for outputting the video signal, and a video signal receiving device for receiving the video signal and recording the video signal on the recording medium,

said video signal output device having:

spreading code generation means for generating the spreading code for spectral spreading at the timing based on the sync signal of the video signal;

inversion spreading code generation means for generating the inversion spreading code formed by dividing the interval of each chip of spreading codes into N (N is an integer of 2 or larger) divided intervals and by allocating alternately the value of the chip and the inverted value of said chip to said N divided intervals;

spectral spreading means for performing spectral spreading on the duplication control signal for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings. using said inversion spreading code;

superimposing means for superimposing the spectrally spread additional information signal on the video signal; and

output means for outputting the video signal on which the spectrally spread additional information signal is superimposed; and

said video signal receiving means having:

reception means for receiving the video signal outputted from the output means;

sync detection means for detecting the sync signal from the received video signal;

inversion spreading code generation means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected sync signal;

inversion spectral spreading means for extracting the received duplication control signal using said inversion spreading code for inversion spectral spreading; and

duplication control means for controlling recording of the video signal on the recording medium based on the extracted duplication control signal.

12. An information superimposition extraction system provided with an information superimposition device for superimposing the additional information signal on the video signal and an information extraction device for extracting the additional information signal from the video signal;

said information superimposition device having:

spreading code generation means for generating the spreading code for spectral spreading at the timing based on the sync signal of the video signal;

inversion spreading code generation means for generating

the inversion spreading code formed by dividing the interval of each chip of spreading codes into N (N is an integer of 2 or larger) divided intervals and by allocating alternately the value of the chip and the inverted value of said chip to said N divided intervals;

spectral spreading means for performing spectral spreading on the additional information signal to be superimposed on the video signal using said inversion spreading code;

superimposing means for superimposing the spectrally spread additional information signal on the video signal; and

output means for outputting the video signal on which the spectrally spread additional information signal is superimposed; and

said information extraction device having:

reception means for receiving the video signal outputted from the output means;

sync detection means for detecting the sync signal from the received video signal;

inversion spreading code generation means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected sync signal; and

inversion spectral spreading means for extracting the

additional information signal from the video signal by performing inversion spectral spreading on the received video signal using said inversion spreading code for inversion spectral spreading.

13. A recording medium having the recorded video signal on which the spectrally spread additional information is superimposed using the inversion spreading code formed by dividing the interval of each chip of spreading codes generated based on the sync signal of the video signal into N (N is an integer of 2 or larger) divided intervals and by allocating alternately the value of the chip and the inverted value of said chip to said N divided intervals.

14. A video signal transmission method for transmitting the video signal on which the spectrally spread additional information signal is superimposed comprising the steps of:

generating the spreading code for spectral spreading at the timing based on one sync signal of the horizontal sync signal and vertical sync signal of the video signal;

generating the inversion spreading code by inverting the phase of the spreading code at the timing based on the other sync signal of the video signal;

performing spectral spreading on the additional information signal using said inversion spreading code, and superimposing the spectrally spread additional

information signal on the video signal.

15. The video signal transmission method as claimed in claim 14, wherein said video signal transmission method further includes;

receiving the video signal on which the spectrally spread additional information signal is superimposed;

detecting the one and the other sync signals from the received video signal;

generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected one and other sync signals; and

extracting the additional information signal by performing inversion spectral spreading on the received video signal using said inversion spreading code for inversion spectral spreading.

16. The video signal transmission method as claimed in claim 15, wherein the additional information signal is the duplication control signal, and said video signal transmission method further includes a step for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings based on said duplication control signal.

17. A video signal output device comprising:

spreading code generation means for generating the

spreading code for spectral spreading at the timing based on the one sync signal of the horizontal sync signal and vertical sync signal of the video signal;

inversion spreading code generation means for generating the inversion spreading code by inverting the phase of the spreading code at the timing based on the other sync signal of the video signal;

spectral spreading means for performing spectral spreading on the additional information signal using said inversion spreading code from said inversion spreading code generation means;

superimposition means for superimposing the spectrally spread additional information signal on the video signal; and

output means for outputting the video signal on which the spectrally spread additional information signal is superimposed.

18. The video signal output device as claimed in claim 17, wherein the additional information signal is the duplication control signal for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings.

19. A video signal reception device for receiving the analog image, on which the additional information spectrally spread using the inversion spreading code formed by inverting

the phase of the spreading code for spectral spreading generated at the timing based on the sync signal of one of the horizontal sync signal and vertical sync signal of the video signal at the timing based on the other sync signal is superimposed, comprising:

sync detection means for detecting the one and the other sync signals from the received video signal;

inversion spreading code generating means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected one or other sync signals; and

inversion spectral spreading means for performing inversion spectral spreading on the received video signal and for extracting the additional information signal using said inversion spreading code for inversion spectral spreading.

20. The video signal receiving device as claimed in claim 19, wherein said video signal receiving device further includes a duplication control means for controlling of recording inhibition on a recording medium, recording permission, or recording restriction on the number of recordings dependently on said duplication control signal.

21. A video signal duplication control system provided with a video signal output device for outputting the video signal and a video signal reception device for receiving the video

signal and recording the video signal on the recording medium,
said video signal output device having:

spreading code generation means for generating the
spreading code for spectral spreading at the timing based on the
one sync signal of the horizontal sync signal and vertical sync
signal of the video signal,

inversion spreading code generation means for generating
the inversion spreading code by inverting the phase of the
spreading code at the timing based on the other sync signal of
the video signal;

spectral spreading means for performing spectral
spreading on the duplication control signal for controlling of
recording inhibition on a recording medium, recording permission,
or recording restriction on the number of recordings using said
inversion spreading code from said inversion spreading code
generation means;

superimposition means for superimposing the spectrally
spread additional information signal on the video signal; and

output means for outputting the video signal on which the
spectrally spread additional information signal is
superimposed; and

said video signal reception device having:

sync detection means for detecting the one and the other
sync signals from the received video signal;

inversion spreading code generating means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected one or other sync signals;

inversion spectral spreading means for performing inversion spectral spreading on the received video signal and for extracting the additional information signal using said inversion spreading code for inversion spectral spreading; and

duplication control means for controlling recording of the video signal on the recording medium based on the extracted duplication control signal.

22. An information superimposition extraction system provided with an information superimposition device for superimposing the additional information signal on the video signal and an information extraction device for extracting the additional information signal from the video signal,

said information superimposition device having:

spreading code generation means for generating the spreading code for spectral spreading at the timing based on the one sync signal of the horizontal sync signal and vertical sync signal of the video signal;

inversion spreading code generation means for generating the inversion spreading code by inverting the phase of the spreading code at the timing based on the other sync signal of

the video signal;

spectral spreading means for performing spectral spreading on the additional information signal using said inversion spreading code from said inversion spreading code generation means;

superimposition means for superimposing the spectrally spread additional information signal on the video signal; and

output means for outputting the video signal on which the spectrally spread additional information signal is superimposed; and

said information extraction device having:

reception means for receiving the video signal outputted from the information superimposition device;

sync detection means for detecting the one and the other sync signals from the received video signal;

inversion spreading code generating means for generating the inversion spreading code for inversion spectral spreading corresponding to the inversion spreading code based on the detected one or other sync signals; and

inversion spectral spreading means for extracting the additional information signal from the video signal by performing inversion spectral spreading on the received video signal using said inversion spreading code for inversion spectral spreading.